

## AFHS Questionnaire Design

March 30, 2020

A key step in achieving the aims of the AFHS was transitioning the questionnaire content from the Computer Assisted Personal Interviewing (CAPI) format currently used by the National Survey of Family Growth (NSFG) to a web survey format. Our objective will be replication of all key content domains and replication of nearly every specific question. That is, we aim to replicate almost all of the NSFG content.

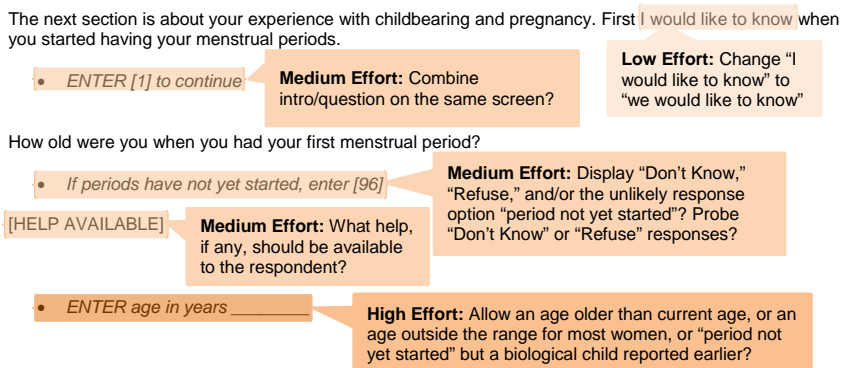
The questionnaire design / translation task itself varied across content domains within the NSFG. **Figure 1** summarizes the content domains of the NSFG female and male interviews. A portion of the NSFG interview is already conducted in Audio-Computer-Assisted Self-Interviewing (ACASI). Translation of this content to a web survey format did not require as much effort as translation of the face-to-face content, as the design of the ACASI instrument already had much in common with the design of web-survey instruments. For other portions of the NSFG interview, the task was more complex. Importantly, the web survey is optimized for smartphone use. The target population of both the NSFG and the AFHS (ages 18-49) will have a relatively high probability of attempting to complete the various modules on smartphones, and our analyses aim to document how particular subgroups of this target population (defined by age, race, and gender) respond to the AFHS protocol and whether particular designs may be more or less effective depending on the subgroup. This information will inform future studies working with similar subgroups and attempting to convert their data collection efforts from face-to-face interviewing to modular mixed-mode data collection with a focus on the web.

Section	Female Questionnaire	Male Questionnaire
A	Household Roster; Childhood Background; Demographic Status	Household Roster; Childhood Background; Demographic Status
B	Pregnancy & Birth History; Adoption & Nonbiological Children	Sex Experience, Sexual Partners, Sterilization, Biological Children
C	Marriage and Cohab History; First Intercourse; Sexual Partners	Current Wife or Cohabiting Partner
D	Sterilization and Impaired Fecundity	Recent (Or Last) Sexual Partner(s) and First Sexual Partner
E	Contraceptive History and Pregnancy Wantedness	Former Wives and First Cohabiting Partner
F	Family Planning and Medical Services	Other Biological Children, Adopted Children, Pregnancies
G	Birth Desires and Intentions	Fathering
H	Infertility Services; Reproductive Health; HIV Testing	Desires and Intentions for Future Children
I	Insurance; Residence; Religion; Work; Child Care; Attitudes	Health Conditions and Health Services
J	Audio CASI: Abortion, Sexual Assault, Risky Behaviors	Residence; Religion; Military service; Work; Attitudes
K		Audio CASI: Abortion, Sexual Assault, Risky Behaviors

Some changes required low effort; for example, revising text with first person pronouns. Other changes required moderate effort; for example, questions were reviewed to determine how best to present less desirable response options without encouraging them (e.g., “Don’t Know,” “Refuse”), or acceptable response options not offered initially in the CAPI version (e.g., “If

volunteered” response options). High-effort changes included determining how hard and soft edit checks should be translated into the web survey version and converting complex skips/routing to the paper backup. A hard edit check requires a respondent to correct a response that is impossible based on a response to a prior question, or correct the response to the prior question. A soft edit check allows an unlikely response to be entered, but first checks with the respondent that their response was entered correctly. These are just a few examples of the more common decisions that needed to be made and the effort involved to translate each survey question from CAPI to web. Even the most minor change to wording or the presentation of survey questions or response options has the potential to affect responses, so each question had to be carefully reviewed and changes were made on a case-by-case basis. For example, **Figure 2** below illustrates the decisions that were required to translate the NSFG’s “age at menarche” survey question from CAPI to web. Even “low effort” changes were labor-intensive when multiplied across many questions.

**Figure 2. CAPI to web translation issues for an example NSFG survey question.**



Another key challenge was replicating the NSFG contraceptive use calendar in the web survey format. NSFG respondents are asked to report sex and contraceptive use, on a month-by-month basis, for a retrospective period of up to 54 months. This procedure places tremendous

recall burden on respondents, is time-consuming, and likely creates substantial reporting error. The problem is exacerbated for those transitioning in and out of sexual relationships, and those who use temporary contraceptive methods such as oral contraceptive pills or condoms. The NSFG requires this long recall period to measure a large number of events and provide high statistical power for contraceptive failure analyses. The substantially cheaper web-survey approach that the AFHS uses, however, could ultimately achieve the required power (person-months of exposure) by collecting more brief retrospective reports (which are less prone to misreporting) from a larger number of people. One thousand (1,000) NSFG interviews generate 54,000 person-months of exposure, but by using a 24-month reporting period among 4,000 people, we will generate 96,000 person-months of exposure with less likelihood of recall error for about the same cost. We also build in memory cues so that respondents can answer the questions more accurately and quickly, and generate a visual summary of the EHC responses provided, allowing respondents to check their answers.

To maximize participation in the survey, the main survey modules will be primarily administered online, but a paper version will be available to complete and mail for those who do not have Internet access. For a random 50% subsample of the full overall sample, the survey itself follows modular design principles and be administered in three separate modules, each requiring approximately 15 minutes to complete for a total of about 45 minutes. The remaining 50% of sampled cases are invited to complete all of the modules in one sitting, enabling an experimental comparison of these two design options for web/mail surveys. The first module includes sections A-C for females and sections A-C for males (**Figure 1**), beginning with straightforward demographic questions. The second module includes sections D-F for females and sections D-G for males. The third module includes sections G-J for females and section H-K for males. The most sensitive questions are administered in the third and final module, just as ACASI is used in the NSFG interview. The AFHS features three (3) main questionnaire modules in English and Spanish. The main questionnaire modules are designed to be self-administered

online instruments. The AFHS employs both a web screening instrument and a paper backup to roster households at the launch of the study, screening households for eligible persons. For the main surveys, the AFHS employs self-administered paper instruments as a backup to the primary online instruments. Any screener and main instruments that are completed on paper and returned by mail are scanned and processed by an external vendor for subsequent analysis purposes. All questionnaires were rigorously tested by the research team before they were used for data collection, including testing of the web-based questionnaires by trained specialists in this task.

Given the state of the existing research, there is an important need to understand the effectiveness of translating a large and complex face-to-face survey into a standard, cost-efficient web survey instrument (which will be programmed using state-of-the-art Blaise software), and evaluate whether a web-based approach can produce estimates with similar quality. The AFHS aims to perform this evaluation.